

Book Reviews

REACHING INTO THOUGHT: THE MINDS OF GREAT APES. Edited by Anne E. Russon, Kim A. Bard, and Sue Taylor Parker. New York: Cambridge University Press. 1996. 464 pp. ISBN 0-521-47168-0. \$84.95 (cloth).

Anthropologists face a bewildering choice of rather pricey books on non-human primate cognitive capacity. Every conference seems to spawn another volume, while the range and complexity of phenomena now being studied expands rapidly. If you wish to choose one volume to start your reading on the subject, *Reaching Into Thought* is a good choice.

The 19 papers by 25 authors introduce recent debates on a range of the hottest topics in nonhuman primate cognitive capacity, including tool-use, reconciliation, imitation, deception, logico-mathematical thinking, self-recognition, and regional variation within the natural species distribution. The great apes are given center stage, but one of the most attractive aspects of this volume is that the papers attempt to define great apes' capacities with comparative research on both ends of the evolutionary spectrum bordering them.

The editors divide the volume into two parts. The first part collects papers on the "scope" of great ape intellectual abilities, by which the editors mean the breadth and complexity in capacities for specific abilities. The second part emphasizes the "organization" of great ape abilities; for instance, the interdependencies among various abilities and the developmental, socio-cultural, and evolutionary mechanisms from which they derive. This reviewer did not find this division to be very useful, if only because all papers deal to some degree with both the scope and organization of cognitive capacities in the species they covered.

Many papers, of course, follow the fundamental research theme of investigating whether apes exhibit human-like capacities.

Gomez reviews data on how apes use eye-contact to show ostensive intent. Boysen reports that chimpanzees can use a "smaller/larger" criterion to select rewards in deception experiments using Arabic numerals, although they fail similar experiments when choosing between two differing quantities of real candy, perhaps because symbols allow the chimpanzees to avoid a strong response to a high incentive food source. Bard and Gardner find that a specially designed responsive care regime enhances both the physical development and social development of nursery-reared infant chimpanzees. Miles, Mitchell, and Harper investigate how a language-trained orangutan imitates signs and motions modeled for him by caregivers. Whitten reviews research on whether nonhuman primates apply a "theory of mind" in social interactions, imitation, and pretend play.

Just as importantly, several authors focus on the contrast between ape and non-ape primates. Anderson compares the cognitive capacities of chimpanzees and capuchin monkeys as revealed by tool-use and self-recognition. Visalberghi and Limongelli argue that capuchin monkeys use tools but, unlike humans and chimpanzees, do not understand cause-effect relations. De Waal and Aureli show that post-conflict behavior (e.g., reconciliation) reveals important differences in cognitive capacity between chimpanzees and macaque monkeys. Hart and Karmel review the cognitive-behavioral markers of self-awareness and self-knowledge in humans, apes, and monkeys.

Field primatologists will appreciate the attention given to primates using their cognitive capacities in relatively natural settings. Russon studied imitation in everyday use among free-ranging orangutans in a rehabilitation colony in Indonesia. Ingman describes tool-use and related object manipulation, such as toothpicks, scratchers, and rain hats, among wild pygmy chimpanzees in Zaire.

Two papers extensively cover regional behavioral variation. Matsuzawa and Yamako-

shi compare chimpanzee tool-use and material-use between two nearby populations of chimpanzees in West Africa. Boesch applies three approaches to investigate the causes of behavioral variation among chimpanzee populations: the ecological, transmission mechanism, and regional innovation approaches.

The evolution of cognitive capacity is another major theme. Byrne argues that gorillas are not dull compared to chimpanzees or orangutans because gorilla feeding and social strategies provide enough complexity to act as selective factors for cognitive capacities. Langer proposes that heterochronic evolution in the ontogeny of cognitive domains explains differences in the cognitive capacities of monkeys, apes, and humans. Parker evaluates evidence for not only the evolution of imitation, but also the evolution of teaching. Call and Tomasello review the effects of artificial environments on ape cognitive development to argue that apes exhibit different skills as a function of human contact.

A central question for anthropologists, and an underlying theme in several contributed chapters, is how and when we can apply the term "culture" to nonhuman apes. Culture and "culture" appear in several papers, three times in titles. The papers by Boesch, Parker, and Russon take up the challenge of formulating comparative definitions of culture. Russon also proposes an explanation for why only chimpanzees, and possibly bonobos, show regional cultures despite the similar cognitive abilities of all the great apes.

This volume keenly reflects the rapidly expanding research on cognitive capacity among nonhuman primates. The papers cover a wide range of topics, yet no paper is out of place or redundant. Readers often pick and choose the papers to read in edited volumes. This is one edited volume that they may find themselves reading entirely.

DAVID S. SPRAGUE

*Institute of History and Anthropology
University of Tsukuba
Tsukuba, Japan*

DEMONIC MALES: APES AND THE ORIGINS OF HUMAN VIOLENCE. By Richard Wrangham and Dale Peterson. Boston: Houghton Mifflin. 1996. 350 pp. ISBN 0-395-69001-3. \$24.95 (cloth).

Demonic Males. It is difficult to imagine a title more deliberately provocative than this for a book that situates the origins and persistence of human violence in an evolutionary context. The compelling prose brings readers into the lives of ruthless, power-hungry apes, simultaneously capturing the imagination and prickling the spine. But it isn't the blood, gore, or sinister strategizing that cause the discomfort. Rather, it is the idea that yet another distinguishing hallmark of humanity, that of our own savagery, is really not so special after all. And with the dark side of our nature so firmly rooted in our primate past comes the chilling prospect that mastering it may be just beyond our control.

Clues to how we might have taken a different evolutionary track, or might still yet do so, are equally unsettling. If only female hominids could have bonded with one another like female bonobos, then we, too, might have the power to exert a calming influence on the aggressive tendencies that the males of our species have unwittingly inherited. If only modern women could be firm about rejecting lucrative sexual exchanges with resource-controlling men, then we could possibly eliminate the winning advantages that male status strivers have managed to gain in the evolutionary game.

The problem, of course, is that human females are every bit as much a product of our biological ancestry as the males we choose as mates. If female hominids didn't bond with one another, it was because the advantages of doing so must have been overshadowed by the disadvantages, just as for contemporary chimpanzees depicted in this volume, where the distribution of fe-